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Crossing Lulua River in the Heart of Africa—Congolese and a loaded truck crowd this motorized ferry, checked by cables from drifting. Bridges span other streams and railroads rumble through the jungle in modern Belgian Congo, where industrial magic is replacing black magic. However, bending, not Bendix, still does the riverside laundry.

(SEE PAGE 141)

W. ROBERT MOORE, NATIONAL GEOGRAPHIC STAFF

UMI

catch of cod to the fish house and brings home a pocketful of cash. With this money Mrs. Greenland buys the necessities. Stores and shops spring up to serve her. A merchant class is growing. Motor boats used by the fishermen require repair shops. Processing and freezing plants and canneries are bringing industry to the Arctic.

The shrimp catch in 1953 was 70 times as large as in 1946; 350 tons were canned on the island.

For elder hunters the shift from sealing by kayak and spear has been great enough. But it has fallen to younger men to make the bigger jump from water to land. In one generation they have done a Jekyll-and-Hyde act, changing from killers of animals to cherishers of livestock. Increasing flocks of sheep bring in money from sheared wool and mutton. Cattle, still few, provide nourishing milk. A reindeer herd brought from Norway provides additional food.

An Eskimo tilling the soil is the greatest geographic incongruity of all. Greenland's warm up, though it averages but a few degrees, is enough to open a few southern vales to small-scale farming. There the sons of Nanook raise hardy vegetables, chickens, and pigs. Seedling forests have been planted in hope of providing a home-grown lumber supply.

What is happening may be a swing back to the climate of 1,000 years ago. When Eric the Red came with his Vikings, A.D. 983, southern Greenland was indeed a green land of pastures and orchards, scientists say.

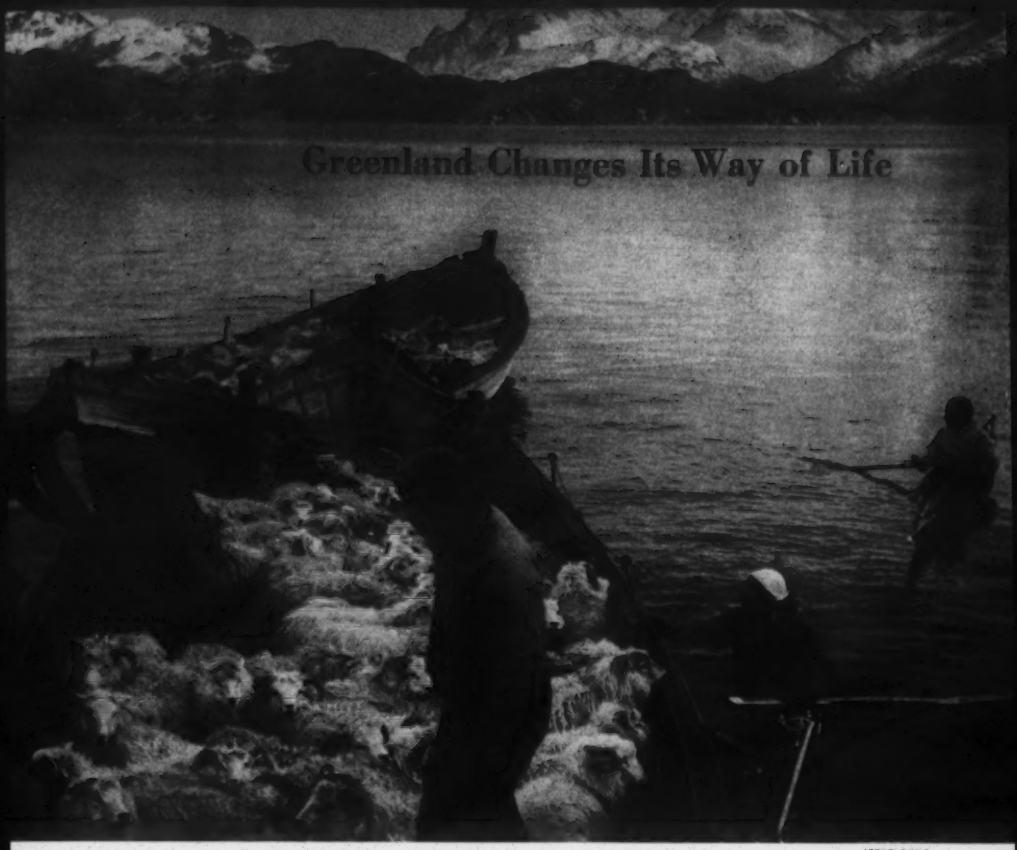
For some 300 years the Norsemen prospered, setting up nearly 200 farming townships. Before Columbus's time they were lost, possibly squeezed off the land by increasing cold and ice. Only Eskimos remained.

Generations passed. Frobisher, Davis, and other explorers came by in turn. In 1721 Hans Povelsen Egede founded the small camp at Godthaab from which Denmark's present chain of settlements has grown.

Today population is a mere 25,000. About 1,500 are Europeans, the rest natives. Most Greenlanders have enough Scandinavian blood to class them as non-Eskimo. All but 2,000 live on the southwest coast, some 1,500 clustering at Godthaab, the capital. Some Danes engage in mining. The free world's natural cryolite, essential in aluminum smelting,

NATIONAL GEOGRAPHIC MAP

New Focus of the Air Age—Greenland's top-of-the-world position puts it halfway between America and Europe and within striking distance of Asia. Thule—930 miles from the North Pole—and other Strategic Air Command bases are designated by open circles.



Greenland Changes Its Way of Life

JETTE BANG

Sheep in Greenland may seem a surprising sight. But those above, being transported to the slaughterhouse, are some of the 30,000 that now graze in the comparatively warm and truly green strip of southwest Greenland between its icy mountains and its surf-scoured coast.

Introduced in recent years, sheep are playing a leading role in the drama of the huge northern island's change-over from a natural to a money economy. Other actors are cattle, codfish, shrimp. The stage is set by climate.

Denmark's icy outpost is getting warmer. For 30 years man has noticed a consistent moderation. The waters of Davis Strait have warmed enough to drive seals farther north and to bring in hordes of cod, the world's number one food fish.

Before the warm up, villagers along Greenland's southwest coast were hunters of the seal. This and other sea mammals provided food, clothing, oil for heat and light, bone for weapons—practically everything needed for existence. Money was unnecessary.

Now the mighty hunter has become a businessman. Instead of dumping a harpooned seal on the beach for his womenfolk to strip, he takes his

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the grinning light-brown faces of townspeople are there to greet you. Sun-bronzed stevedores start to load copra, and cinnamon oil and bark—prime Seychellois exports—as you go ashore.

The hot afternoon sun beats down on corrugated metal roofs that shade the shuttered shops lining Victoria's narrow Market Street. You will notice a preponderance of women, as Seychelles men migrate to Africa in search of work. These women, many schooled in Victoria's Catholic convent, speak a creole patois. The Napoleonic Code still rules the law court. For although the Seychelles have been officially British since the Napoleonic wars, a French flavor remains.

The French first colonized the uninhabited islands in 1768. African slaves and Indians were brought in to work spice plantations that supplied the table of Louis XV. Later came political exiles. Pirates used the islands for a base to raid merchantmen. Chinese traders filtered in. Even today, the *Grands Blonds*, as leading French planters are called, regard as foreigners the British officials and the small "colony" of retired British army officers and civil servants who make Mahé home.

As you unpack in the quaint Hotel Empire the cathedral clock strikes the hour. Three minutes later it repeats in case you missed count.

Driving along the coast road, you pass plantations where workers live in palm-thatched huts. Manioc bread, turtle meat, fish-head soup, breadfruit, and bananas round out their rice diet. As sunset reddens the sky, pirogues and schooners bring home their catch of fish and bêche-de-mer.

A few hours' sail from Port Victoria will bring you to your island, washed by the timeless sea. Once there, only bird cries and the endless pound of surf breaks the silence of your plantation dreams.

References—The Seychelles appear on the Society's map of Africa.

Fish Dry in the Sun on Praslin Island—This Seychelles isle also produces two-headed coconuts weighing 40 pounds, and supports giant tortoises which live 300 years.

FRANCIS LEESON

comes from Ivigtut, far south. Coal is mined on Disko Island in Davis Strait.

To the supply docks of Faeringehavn, near Godthaab, in 1953 came 200 foreign fishing vessels of a dozen nations. Transport to other ports is handled by Danish vessels. In 1950 complete freedom of entry from Denmark was instituted. In 1953 a new Danish constitution converted Greenland from a colony to an integral part of the kingdom.

Strategic air center in hot- and cold-war planning, Greenland last month became a civilian steppingstone as well. The new Scandinavian Airlines Copenhagen to Los Angeles flight touches down at Bluie West 8, near Holsteinsborg. Following a great circle route, this flight is some 640 miles shorter than via New York.

About 700,000 of Greenland's 827,300 square miles are buried under the world's second-greatest ice cap (after Antarctica's) and thus are indefinitely out of circulation for human use, except for airstrips and ice research.

References—Greenland is shown on the National Geographic Society's map of Canada, Alaska & Greenland. Write the Society, Washington 6, D. C., for a map price list. "Far North with 'Captain Mac'," *National Geographic Magazine*, Oct., 1951; "Milestones in My Arctic Journeys," Oct., 1949; "Americans Stand Guard in Greenland," Oct., 1946; "Greenland Turns to America," Sept., 1942; "Greenland from 1898 to Now," July, 1940. *School and library discount price for Magazine issues a year old or less, 50¢; through 1946, 65¢. Write for prices of earlier issues.*

Seychelles: Indian Ocean's Timeless Isles

Want an island in the Indian Ocean?

You can buy or lease one from the British Crown Colony of Seychelles, an archipelago including the Seychelles, Amirante, Aldabra, and Cosmoledo Islands strewn over a 550-mile path from Madagascar northeast toward Bombay. But you must start an industry on your tropical isle.

Overpopulation and underdevelopment of natural resources plague the Seychelles. Some 37,000 people crowd 156 square miles of land. The Seychellois laborer earns few rupees, and these he must spend on the imported rice he eats and the cotton goods he wears.

The Seychelles government is concerned about providing homes and work for the 1,500 Seychellois laborers that must return now that Britain is evacuating her Suez Canal base. The plan is to settle them on Aldabra Island, where they could fell the mangrove trees for timber.

"This would destroy one of nature's unique sanctuaries," protests Captain Jacques-Yves Cousteau, there recently on an expedition sponsored by the National Geographic Society and the French National Education Ministry. Thousands of 200-pound tortoises and sea turtles thrive in Aldabra's 20-mile-long lagoon and water-laced mangrove flats. An ornithologist's paradise, the untouched atoll teems with cardinals, terns, gannets, white egrets. Many species exist nowhere else in the world.

By steamer from Mombasa, Kenya, or from Bombay you approach a green forest-clad isle rising to 3,000-foot heights. Soon you dock at Port Victoria on 17-mile-long Mahé Island. Mahé, the principal island, is home to one third the colony's population.

Arching palms and lush tropical foliage shield the town from view but

engaged in a tete-a-tete with her kitten pal, who likes goats personally almost as much as she enjoys lapping bowls of their milk.

But such placid pursuits don't long hold capricious caprine attentions. There are more exciting things to do. Like nipping buttons off the clothes of visitors to the Catskill Mountains farm. Or munching forbidden shrubbery, garden vegetables, and yard flowers. Or getting people's goat by climbing over shiny new cars, or usurping the porch swing.

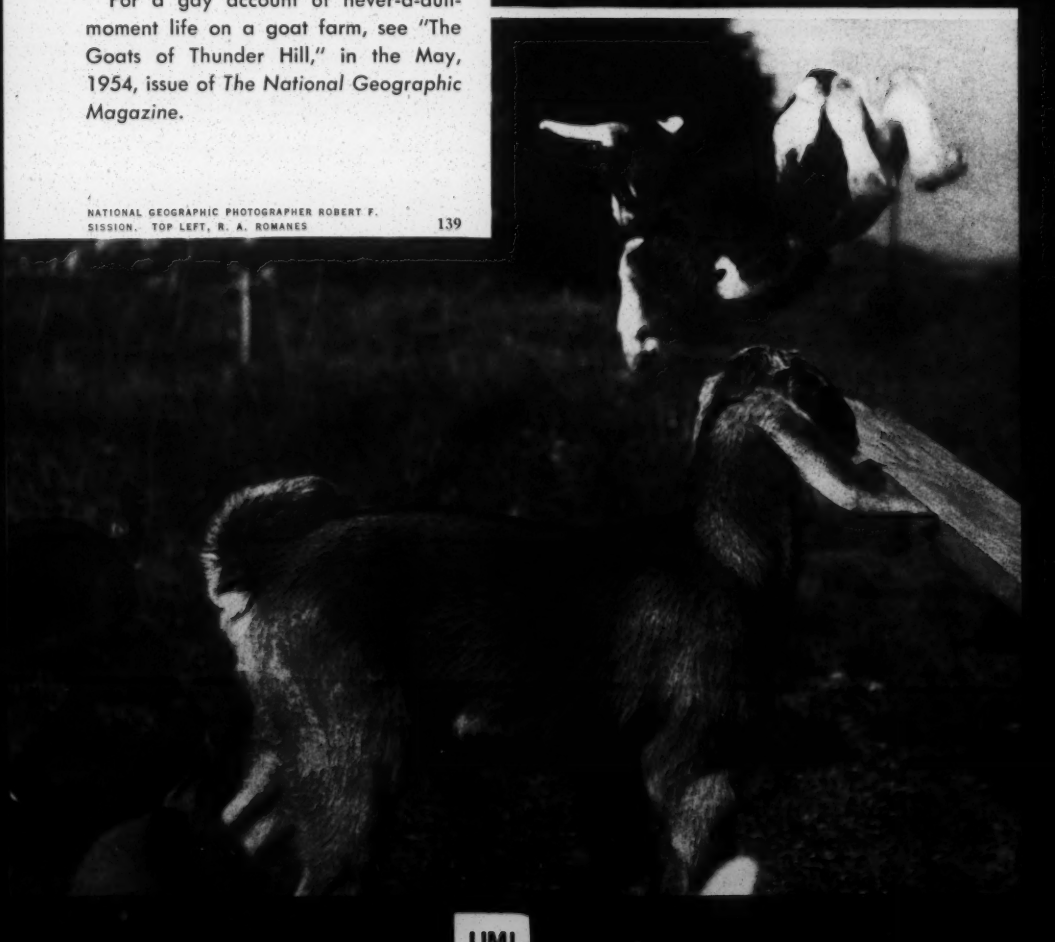
And what fun to snitch things from the farmhouse and watch everyone go crazy trying to find them!

When mischief palls, kids get together for sports at the backyard springboard. Ursule gaily bounces into mid-air while Laura, a Nubian, waits her turn.

Soon Amber, older, more sedate than the rest, ambles over to watch. Playfully, even she butts her companions. Some kids just never grow up.

For a gay account of never-a-dull-moment life on a goat farm, see "The Goats of Thunder Hill," in the May, 1954, issue of *The National Geographic Magazine*.

NATIONAL GEOGRAPHIC PHOTOGRAPHER ROBERT F. SISSION. TOP LEFT, R. A. ROMANES



Thunder Hill Kids at Play

Life on a Goat Farm . . .

"Hey, kids! Look what the mailman brought," blats a venturesome young goat, atop a precarious perch.

But Ursule, a French Alpine doe, is called instead to the door to explain her latest prank to Mother.

"Ya-a-a-h!" exclaims Mother in shock and dismay. But deep down in her goatish heart she knows that kids will be kids.

And Amber, Nubian doe, can't be bothered, for as anyone can see, she's engaged in a tête-à-tête with her kitten pal, who likes goats personally almost

Manuel is an Aymará Indian. His ancestors once ruled this bleak plateau between towering Andes ranges. They worked gold, silver, tin, knew how to cast alloys, and weld copper. The Inca Empire eventually subjugated and absorbed his people. Then came conquering Spaniards to the altiplano, which extends from Bolivia north through Peru and Ecuador. Spanish colonial rule brought slavery in the mines, serfdom on the haciendas, near extermination to the Indian.

Today white men come to help the altiplano Indian. Manuel has seen strangers surveying the land. Recently when he trudged with his laden llama to the village he heard talk of a United Nations Technical Assistance Program "to improve the lot of the 6,000,000 Indians living in the altiplano." Ah, yes, but there had been so many promises.

Yet had not these strangers actually given him new types of seed supposed to be good in high altitudes? And fertilizer, and better tools, made of iron, not hardened wood? No longer will he be so hungry.

Manuel draws up to his full five feet and heads back to his uta. A spark of hope quickens his step. Maybe he *will* soon own a plot of his own. Imagine not working three or four days each week without pay on land of his *patrón*. Manuel has never seen his patrón, who lives in La Paz.

Maybe the strangers' new health stations will cure his *reumatismo*. Or his wife's cough, which is very bad. Or help his little boy, who seems so weak that he might die as many Indian children do. Manuel is lucky. He has already lived to 30—past his prime.

The lizard wriggles to escape. Manuel looks at it, smacking his lips. It will be so tasty, and so good for his eyes.

References—The Andes appear on the Society's map of South America. "At Home in the High Andes," *National Geographic Magazine*, Jan., 1955; see under *Andes, Bolivia, Ecuador, Peru*, in *National Geographic Magazine Cumulative Index;* GEOGRAPHIC SCHOOL BULLETINS, May 10, 1954, "Inca Descendants in Peru Resist Change."

The Door Is Open in the Belgian Congo

W. ROBERT MOORE, NATIONAL GEOGRAPHIC STAFF

Plumed warriors leap and stamp, and tom-toms pulse through the jungle night. But today in the Belgian Congo you'll hear other sounds as well. As tribesmen mine rich ore deposits, compressed-air drills set up a staccato beat faster than any drummer. Steam shovels grunt, hydroelectric dams rise, factory machinery hums.

Education, public health programs, and modern industrial techniques are transforming the funnel-shaped land, bringing a better way of life to its people by opening doors of opportunity. Congolese are responding by

MARTIN CHAMBI J.

Fiesta Brings Together Peruvian Highlanders Beneath Snow-crested Andean Peaks

Indians of the Andes Get UN Aid

Manuel draws the coarse llama-wool poncho tighter about his shoulders. A thimble-shaped felt hat covers his head. Beneath it a tasseled scarf keeps his ears warm against the thin air of the 12,000-foot Bolivian altiplano. Gray overcast shuts out the Andean sun.

Manuel has just left his *uta*—tiny, windowless hut with mat door of Lake Titicaca reeds. Made of turf blocks cemented with clay and covered with esparto grass, his home keeps cold winds out, body heat in. The family sleeps huddled together, fully clothed save for their hats.

Manuel's small, calloused feet pad along a rocky trail toward his sheltered garden. Chewing a coca leaf—favorite Andean stimulant—he digs potatoes and gathers *quinoa*, mountain cousin of spinach.

He squats soon to rest, poncho hiding his short legs and deep chest. One needs big lung capacity to work in two-mile heights. But Manuel would live nowhere else. An uncle once went down to Mollendo, a seaport in Peru, and nearly choked to death in the thick air.

Manuel sees a lizard crawl onto a nearby rock. He grabs it, for he knows lizard meat is good for the eyes.

CARL S. BELL

At Home on the Altiplano—Outside their *uta* Bolivian Indians select smaller potatoes for freezing and drying. This hardy vegetable—Andean gift to the world—grows up to 14,000-foot levels.

STATUTE MILES

12,000,000 natives. From an international scandal, the Congo has become a model for colonial development.

World War II focused attention on the Congo's strategic minerals. Since then increasing amounts of copper, tin, cobalt, magnesium, industrial diamonds have been taken from open-pit mines and underground shafts. In the south-central province of Kasai, native crews sift three tons of gravel for each carat of diamonds. Yet the province yields 75 percent of the world's production of industrial diamonds. The new Bakwanga district alone produces 10,000,000 carats a year! Many of these diamonds go to the United States for use in machine tools, drills, and other cutting equipment.

Fortunes in gold come from the Mines d'Or de Kilo in the northeastern highlands. But the Belgian Congo's mineral jackpot lies in the southwestern province of Katanga. Katanga's wealth in copper and magnesium is topped by its fabulous uranium deposits. Shinkolobwe mine, closely guarded by the Belgian and American secret service, is reported to produce over half of the world's uranium, 90 percent of its radium.

For all the colony's mineral wealth, agriculture is not slighted. Cotton is grown; oil-palm plantations flourish throughout the Congo basin. The palm nuts are processed into oil for the manufacture of margarine and soap. In 1952 the value of palm oil and palm kernels exported nearly equaled that of all the cobalt and diamonds shipped out.

Where eastern plateaus range to 7,000 feet, rolling fields of pyrethrum flowers furnish insecticides. Vast herds of long-horned cattle graze; coffee plants thrive. Coffee has been cultivated in the Congo only since 1920. Yet a recent crop earned more Congo francs than the year's diamond output.

Most Congolese are Bantus, but in the Ituri Forest of the northeast live primitive pyg-

W. ROBERT MOORE, NATIONAL GEOGRAPHIC STAFF

Sluicing Gold in the Congo—Powerful sprays wash away light gravels; heavier gold settles in sluice boxes. Shovel men keep the channel open. Congo gold production—from open-pit and shaft mining as well as placer—often tops $12,000,000.

W. ROBERT MOORE, NATIONAL GEOGRAPHIC STAFF

This Engraver Tools Designs on a Copper Printing Cylinder to Decorate Congo-produced Cotton Cloth

making the long leap from primeval savagery to the Atomic Age in record-breaking time.

Three quarters of a century ago Africa was the "Dark Continent," the mysterious Congo its heart. Occasional adventurers brought back lurid tales of tattooed and painted tribesmen who practiced "black magic" in trackless equatorial jungle. They told of giants and pygmies in eastern highlands, of elephant stampedes, of lunging lions and leopards, of dark rivers seething with crocodile, rhinoceros, and hippopotamus.

Then English explorer Henry M. Stanley discovered the source of the Congo. Making long portages around boiling rapids, he traversed its entire 2,718 miles of "liquid wilderness," reaching the mouth on the Atlantic in August, 1877. The heart of Africa lay open.

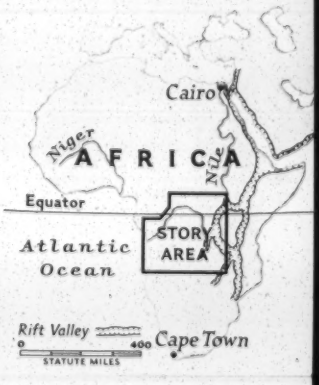
Leopold II, King of the Belgians, sent Stanley back to exploit and explore further the Congo basin, second largest in the world. This led to Leopold's personal empire—the Congo Free State. His engineers pushed a 230-mile railroad from the seaport of Matadi to Léopoldville, thus breaking the barrier of the Crystal Mountains rapids that block navigation so near the Congo's mouth. At "Leo," on Stanley Pool, begin 8,000 inland miles of navigable Congo waters.

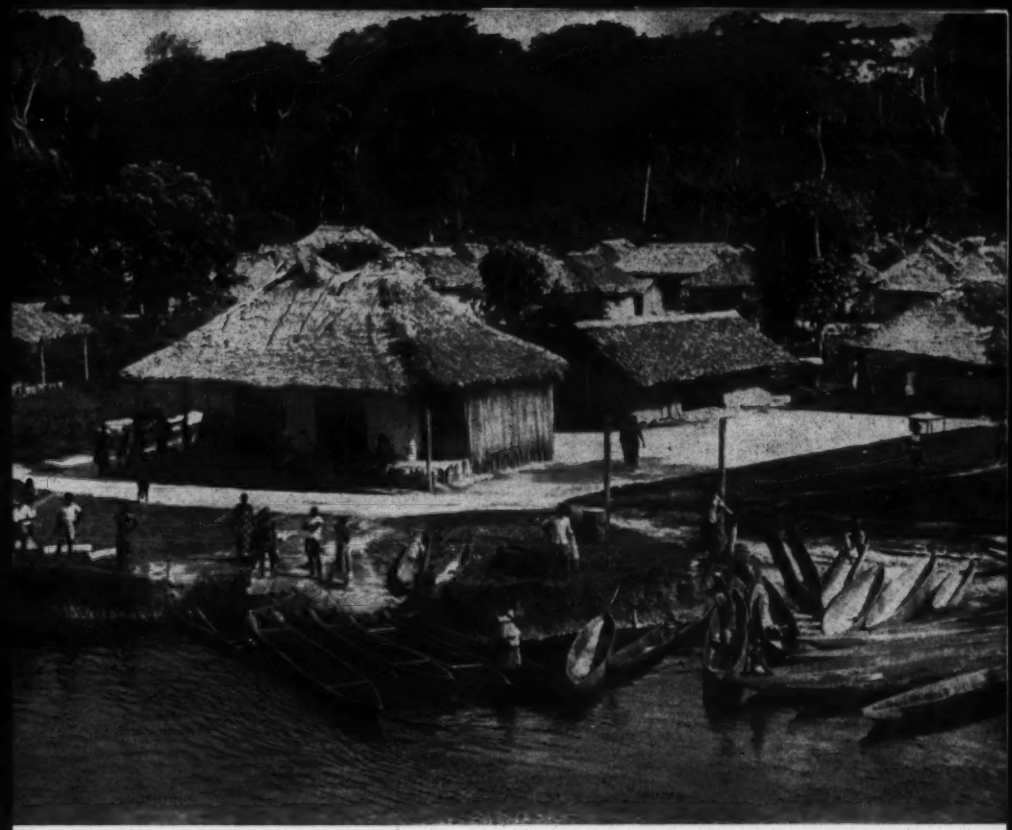
Though Leopold stamped out the slave trade carried on by Arabs and instituted other reforms, his regime is best remembered for ruthless exploitation. In 1908 Belgium began governing this vast preserve 77 times its own size and equal to the United States east of the Mississippi.

The Belgians have brought peace, health, and prosperity to a land they found ravaged by intertribal warfare and tropical disease. Modern cities have risen: Léopoldville, capital and distributing center; Stanleyville, 1,075 miles farther up the Congo; Elisabethville, mining center in the southeastern highlands; all connected with one another and the outside world by airlines.

More than 25,000 schools bring education to tribesmen who, until the Europeans came, had no knowledge of the written word, had never seen a wheel. Natives now run locomotives, work as clerks, teachers, medical assistants, plumbers, nurses, at any number of jobs requiring skill and training. Their living standard is among the highest on the continent. These enlightened colonial policies enable some 70,000 white residents to live peaceably among

NATIONAL GEOGRAPHIC MAP





W. ROBERT MOORE, NATIONAL GEOGRAPHIC STAFF

Free Parking for Dugouts along the Belgian Congo's Main Street—Villagers chisel their tipsy craft from hardwoods felled in the primeval forest behind palm-thatched homes and paddle onto a river system second only to the Amazon. At the Congo's mouth, a 25-mile stretch of the Atlantic gives the huge colony its only seacoast.

mies in their tiny huts of twigs and leaves. These plucky four-and-a-half-footers even tackle the mighty elephant with their poisoned arrows and spears. Across the Rift Valley that cradles the great lakes—Tanganyika, Kivu, Edward, and Albert—lies Ruanda-Urundi, mandated to Belgium after World War I. There live giant seven-footers, the high-jumping Watusi (illustration, page 141). No one who saw the movie *King Solomon's Mines* can forget the exciting traditional dance of the Watusi, as they charge unseen enemies, ankle bells tinkling, fiber plumes flying, stick-spears brandished aloft.

Although more cars and trucks are appearing on the Congo's 65,575 miles of dirt road, and trains roll over 3,314 miles of track, the Congo River remains the colony's main highway. New Diesel-engined river boats are gradually replacing the venerable wood-burning stern-wheelers brought over from the Mississippi. The most common form of transport remains the dugout canoe, paddled on these same waters since time began. But in the highlands the top chiefs prefer Lincolns and Cadillacs.

References—The Belgian Congo appears on the Society's map of Africa. "Safari from Congo to Cairo," *National Geographic Magazine*, Dec., 1954; "White Magic in the Belgian Congo," March, 1952; "Keeping House on the Congo," Nov., 1937; GEOGRAPHIC SCHOOL BULLETINS, April 27, 1953, "Belgian Congo Leads in Uranium, Diamonds."